

ABSTRACT OF THE DISCLOSURE

A magnetic separation system for separating magnetic from non-magnetic particles employing a dry drum/belt magnetic separator includes an electrostatic separator, including electrodes located closely adjacent a moving belt overlying the magnetic drum for attracting charged non-magnetic particles on the belt to remove such particles from the belt. The electrodes are formed as an elongate metal rod coated with a non-electrically conductive material. The rods are positioned lengthwise in a manner such that the rod is substantially transverse the direction of movement of the belt. The system also includes an ionizer for creating an ion cloud directed toward a surface of the belt for electrically neutralizing the surface of the belt.